

* * * HANDLER LIST * * *

Handler Name / ID / Address	S O N P	Regulated Activities
UNION OIL CO OF CA CAT000611228 BERTH 150 PIER A ST, WILMINGTON	PP	SG
UNOCAL LOS ANGELES REFINERY CAD008237679 1660 W ANAHEIM ST, WILMINGTON	PP L	LG

* * * * * E N D O F R E P O R T * * * * *

Which is the
Marine Terminal?

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

131 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600



May 1, 1996

Mr. D.D. Ching
Unocal Petroleum Products & Chemicals Division
Unocal Corporation
1660 West Anaheim Street, P.O. Box 758
Wilmington, CA 90748

Mr. Jeff Simko, Corporate Environmental Manager
HCl U.S.A. Distribution Companies, Inc.
1551 N. Tustin Avenue, #430
Santa Ana, CA 92701

Mr. John R. Nichter
Occidental Chemical Corporation
360 Rainbow Blvd., S. - Box 728
Niagara Falls, New York 14302

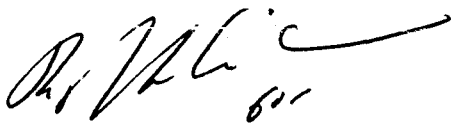
**UNOCAL MARINE TERMINAL, BERTHS 148-150 PORT OF LOS ANGELES -
SUPPLEMENTAL SOIL AND GROUND WATER ASSESSMENT (FILE NO. 85-8)**

Reference is made to your telephone discussion with staff on April 30, 1996, and your "Supplemental Soil and Ground Water Assessment" Work Plan submitted on February 23, 1996. Following are our comments:

1. The proposed "deep" monitoring well pattern is insufficient to delineate the vertical and lateral extent of VOC contamination. VOCs were identified in ground water samples collected from shallow Unocal monitoring wells MW-4, MW-12, and MW-13 in 1992 and MW-13 in 1994. Although VOCs were not identified in monitoring wells MW-4 and MW-12 during a second sampling two years after the first, site VOCs may have migrated below the shallow ground water monitoring well screens between sampling episodes. Additional deep ground water monitoring wells are required for the subject site.
2. The work plan indicates that "...the soil underlying the site are unconsolidated, laterally discontinuous, stratified deposits of predominantly sand and sandy silt... to a depth of 37 to 40 feet bgs [below ground surface]. The soils become fine with depth and a semi-confining layer of silt and silty clays is encountered at 37 to 40 feet bgs." Previous ground water investigations in 1992 and 1994 indicate that volatile organic compounds (VOCs) are present at the semi-confining layer in monitoring wells L-6, L-7, and L-8. Deeper ground water monitoring wells, screened below the semi-confining layer, must be installed to determine if site contaminants have migrated through this layer impacting the lower water bearing zone. As discussed with staff, the results of the subject ground water investigation may be used to determine the location for the additional deeper downgradient ground water monitoring wells.
3. The work plan also indicates that the ground water within the three aquifers underlying the site are hydraulically connected and is affected by sea water intrusion. Collect surface water and sediment samples in the Harbor to evaluate if VOCs have impacted the harbor.

4. Analyze for VOCs, soil samples collected from the bottom of the proposed "deep" borings, at the "semi-confining" layer at about 40 feet bgs, to determine the lateral extent of VOC contamination in the semi-confining layer. This data will also be useful for locating the required downgradient monitoring well screened below the semi-confining layer.
5. Provide a detailed sampling plan for the collection of soil and ground water samples at the subject site. Submittal of soil samples to the laboratory which have been "...extruded into a plastic sleeve...." is not acceptable for volatile organic compound (VOC) analyses.
6. Perform a sieve analysis for the screened interval for monitoring well MW-103 to assure that the well screen and sand pack are properly sized to collect representative non-turbid ground water samples from the saturated zone at the semi-confining layer interface.
7. The investigation report shall include, but not limited to, the following:
 - a. Isoconcentration maps, delineating dense nonaqueous phase liquid (DNAPL), light nonaqueous phase liquid (LNAPL), and dissolved phase site contaminants. Dissolved phase site contaminants must be delineated to the method detection limit for the constituents of concern.
 - b. Fence diagrams depicting the site lithology and ground water monitoring well screen zones at the subject site.
 - c. A plot plan depicting the location of all cross sections and ground water monitoring wells at the subject site.
 - d. A work plan to install downgradient ground water monitoring wells, screened below the semi-confining layer, to evaluate if the ground water in the lower aquifer has been impacted by site contaminants.

Submit a revised work plan to this Regional Board by June 24, 1996, addressing the above comments. If you have any questions, please contact Keith Elliott at (213) 266-7614.



J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Mr. Jorge Leon, State Water Resources Control Board, Office of Chief Counsel
Mr. Mostafa Radmand, United States Environmental Protection Agency, Region 4
Mr. Norburto Pautassi, Department of Toxic Substances Control, Region 4
Mr. Dennis Hagner, Port of Los Angeles
Ms. Meg George, Unocal Los Angeles Refinery - Carson Plant

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JUL 10 1996
STATE WATER RESOURCES CONTROL BOARD
LOS ANGELES REGION
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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE

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May 16, 1996

Mr. D.D. Ching
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1660 West Anaheim Street, P.O. Box 758
Wilmington, CA 90748

Mr. Jeff Simko
HCI U.S.A. Distribution Companies, Inc.
1551 N. Tustin Avenue, #430
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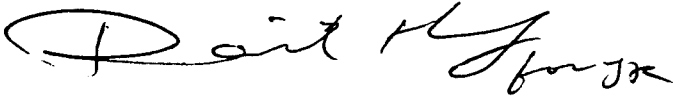
Mr. Alastair J. H. McGregor
Occidental Chemical Corporation
360 Rainbow Blvd., S.
Niagara Falls, New York 14302

UNOCAL MARINE TERMINAL, BERTHS 148-151 PORT OF LOS ANGELES - ADDITIONAL COMMENTS REGARDING THE JOINT ASSESSMENT WORK PLAN (FILE NO. 96-059)

Reference is made to your "Supplemental Soil and Ground Water Assessment Program Scope of Work" for the subject site submitted on February 23, 1996, and our comment letter of May 1, 1996. We have subsequently reviewed the Unocal "Ground Water Monitoring Report" dated April 11, 1996, and have the following additional comments:

1. Appendix B of the April 11, 1996, report summarized the presence of up to 32 mg/l methyl tertiary butyl ether (MTBE) in ground water samples collected in May and July 1995 from monitoring wells MW-5, MW-7, MW-10, and MW-11 at the subject site. Based on the results of this sampling episode, MTBE may be migrating off-site north of the facility.
2. Place additional "deep" boring and hydropunch sample points to the north of the western half of the site and to the east of the site to identify potential off-site MTBE and VOC ground water contamination. If MTBE or VOCs are identified in samples collected from these deep borings or hydropunch samples, then include these locations in the areas for installing additional deep ground water monitoring wells, required in comment 1 of our May 1, 1996, letter.
3. Request the laboratory to report MTBE as part of the EPA Methods 8020, 8240, or 8260 analyses of all soil or ground water samples submitted from the subject site.
4. For your information, MTBE is being evaluated by the United States Environmental Protection Agency (USEPA) Office of Science and Technology as a potential human carcinogen. Their March 1996 draft report titled "Fuel Oxygenates and Water Quality,..." shows a drinking water lifetime health advisory for MTBE ranging from 20 $\mu\text{g}/\text{l}$ to 200 $\mu\text{g}/\text{l}$. In 1991, the California Department of Health Services Division of Drinking Water and Environmental Management (DHS) established an action level of 35 $\mu\text{g}/\text{l}$ MTBE in drinking water. Recently, the DHS has requested all water supply purveyors to monitor for MTBE in their water wells.

Submit a revised work plan to this Regional Board by June 24, 1996, addressing the above comments and the comments of our May 1, 1996, letter (enclosed). If you have any questions, please contact Keith Elliott at (213) 266-7614.

A handwritten signature in cursive script, appearing to read "J.E. Ross".

J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: : Mr. Jorge Leon, State Water Resources Control Board, Office of Chief Counsel
✓ Mr. Mostafa Radmand, United States Environmental Protection Agency, Region IX
Mr. Ahmed Hegab, Department of Toxic Substances Control, Region 3, Glendale
Mr. Dennis Hagner, Port of Los Angeles
Ms. Meg George, Unocal Los Angeles Refinery - Carson Plant

Enclosure

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE
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May 16, 1996

Mr. D.D. Ching
Unocal Petroleum Products & Chemicals Division
Unocal Corporation
P.O. Box 758
Wilmington, CA 90748

**UNOCAL MARINE TERMINAL, BERTHS 148-151 PORT OF LOS ANGELES - COMMENTS
CONCERNING THE WESTERN FREE PRODUCT RECOVERY SYSTEM AND MTBE
(FILE NO. 96-059)**

We have reviewed your "Interceptor Recovery Trench Work Plan, Berths 148-149", "Western Free Product Recovery System Remediation Work Plan", submitted on April 25, 1996, and your "Ground Water Monitoring Report" dated April 11, 1996, for the subject site. In addition, we reference the telephone discussion between Meg George and staff on May 3, 1996, concerning the above reports. Following are our comments:

1. We have no objections to your initiating the proposed western free product recovery remediation, subject to the following modifications:
 - a. The interceptor trench shall be lengthened southward to extend across the entire width of the "Pool I" free-phase hydrocarbon plume. The actual trench length may be determined by field observations, as discussed on May 3rd.
 - b. Co-produced waste water associated with the system, if any, shall be analyzed for methyl tertiary butyl ether (MTBE) and volatile organic compounds (VOCs).
 - c. Starting **October 15, 1996**, for the previous three month period, submit quarterly free-phase hydrocarbon recovery reports summarizing the volume of hydrocarbons and co-produced waste water recovered from each of the three free-phase hydrocarbon pools at the subject site.
2. The "Western Free Product Recovery System Remediation Work Plan" referenced an unpublished report by Applied Environmental Services that identified up to 470 mg/kg MTBE in site soils and up to 32 mg/l in underlying ground water. Submit the subject unpublished report to this Regional Board.
3. MTBE was not reported by the laboratory for the spring and fall 1995 sampling events. Request the laboratory to review the EPA Method 8020 chromatographs for the 1995 sampling events and report the results for MTBE. In the future, request the laboratory to report MTBE as part of any EPA Methods 8260, 8240, or 8020 analyses for soil or ground water sampled from the subject site. Submit the subject data to this Regional Board.

4. Delineate the full lateral and vertical extent of MTBE contamination in soil and ground water from the subject site. This investigation may be incorporated into the joint assessment work plan addendum, as discussed on May 3rd. The work plan is required since:
 - a. Appendix B of the ground water monitoring report summarized the presence of up to 32 mg/l MTBE in ground water samples collected in May and July 1995 from monitoring wells MW-5, MW-7, MW-10, and MW-11 at the subject site. Based on the results of this sampling episode MTBE may be migrating off-site north of the facility.
 - b. MTBE is an oxygenated fuel additive stored on-site in above ground storage tanks. A discharge of petroleum hydrocarbons and MTBE occurred from a concrete sump on the west side of the terminal, near the bulkhead and associated with ship loading and off-loading. Subsequently, this sump was repaired and resealed in July 1995 and operational procedures were modified to unload MTBE on the east side of the terminal where the waste water collection system is above ground.
 - c. MTBE is being evaluated by the United States Environmental Protection Agency (USEPA) Office of Science and Technology as a potential human carcinogen. Their March 1996 draft report titled "Fuel Oxygenates and Water Quality,..." shows a drinking water lifetime health advisory for MTBE ranging from 20 µg/l to 200 µg/l. In 1991, the California Department of Health Services Division of Drinking Water and Environmental Management (DHS) established an action level of 35 µg/l MTBE in drinking water. Recently, the DHS has requested all water supply purveyors to monitor for MTBE in their water wells.

Submit a work plan and information referenced in comments two through four, above, to this Regional Board by **June 25, 1996**. If you have any questions, please contact Keith Elliott at (213) 266-7614.

A handwritten signature in dark ink, appearing to read "David H. Ross" with "for JR" written below it.

J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: Mr. Jorge Leon, State Water Resources Control Board, Office of Chief Counsel
Mr. Mostafa Radmand, United States Environmental Protection Agency, Region IX
Mr. Ahmed Hegab, Department of Toxic Substances Control, Region 3 - Glendale
Mr. Dennis Hagner, Port of Los Angeles
Inspector Butcher, Los Angeles City Fire Department, Bureau of Fire Prevention, Engineering Unit.
Ms. Meg George, Unocal Los Angeles Refinery - Carson Plant

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE

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October 16, 1995

Mr. D.D. Ching
Unocal Petroleum Products & Chemicals Division
Unocal Corporation
1660 West Anaheim Street, P.O. Box 758
Wilmington, CA 90748

**UNOCAL MARINE TERMINAL, BERTHS 148-150 PORT OF LOS ANGELES - TEMPORARY
EMERGENCY SKIMMING OF FREE-PHASE HYDROCARBON FROM THE GROUND WATER
(FILE NO. 85-8)**

Reference is made to your proposed Free Product Skimming System Work Plan dated August 15, 1995, and the subsequent telephone discussion between Meg George and Keith Elliott.

Based upon our telephone discussion, a work plan for an extensive ground water remediation system will be submitted in the near future for the commingled hydrocarbon and VOC contaminant plume at the subject site. In addition, the proposed skimming pumps will be periodically removed from the monitoring wells for maintenance, allowing the monitoring wells to be gauged and sampled for analyses.

We have no objections to your initiating the proposed measures to commence removal of free-phase hydrocarbons from the ground water, subject to submittal of your written confirmation of the following conditions:

1. Produced water from the skimming pumps shall be sampled and analyzed for VOCs.
2. At least quarterly, the skimming pumps shall be removed from the monitoring wells, and the monitoring wells gauged, sampled, and analyzed, for dissolved TPH, and VOCs.

If you have any questions, please contact Keith Elliott at (213) 266-7614.



J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: See mailing list.

Mr. Steve Smith
Unocal Los Angeles Refinery - Wilmington Plant
Page 2

Mailing List

cc: Mr. Jorge Leon, State Water Resources Control Board, Office of Chief Counsel
Mr. Mostafa Radmand, United States Environmental Protection Agency, Region IX
Mr. Norburto Pautassi, Department of Toxic Substances Control, Region 4 - Long Beach
Mr. Dennis Hagner, Port of Los Angeles
Ms. Meg George, Unocal Los Angeles Refinery - Carson Plant
Mr. Jeff Simko, HCI U.S.A. Distribution Companies, Inc.
Mr. John R. Nichter, Occidental Chemical Corporation

ENV-1100/95



November 9, 1995

Los Angeles Refinery

Certified Mail No.
Return Receipt Requested

Mr. J. E. Ross, Unit Chief, Site Cleanup Unit
California Regional Water Quality
Control Board, Los Angeles Region
101 Center Plaza
Monterey Park, CA 91754-2156

RE: Unocal Marine Terminal
LNAPL Skimming System

Dear Mr. Ross,

Reference is made to your October 16, 1995, letter response (copy attached) to Unocal's August 15, 1995, proposed Free Product Skimming System Work Plan. After careful review Unocal proposes the following modifications to Items 1 and 2 of your letter. Unocal requests your prompt review of our proposed changes so that, following your approval, the installation and operation of the skimming system can be initiated.

Item 1: *Produced water from the skimming pumps shall be sampled and analyzed for VOCs.*

1. The proposed skimming system has been carefully designed to eliminate co-produced ground water. However if some water is co-produced, a sample will be collected and analyzed. Co-produced water, if present, would be analyzed semiannually, as agreed with the Port of LA.

Item 2: *At least quarterly, the skimming pumps shall be removed from the monitoring wells and the monitoring wells gauged, sampled and analyzed for dissolved TPH and VOCs.*

1. Unocal recommends that prior to designing a ground water monitoring program for the site, the Board review the results of the joint assessment study being planned for the site. This assessment will be a joint effort by Unocal, HCI U.S. A. Distribution Companies, Inc. and Occidental Chemical Corporation. The group has selected the consulting firm RETEC to do the study. A Work Plan for this study is being prepared by RETEC and will be submitted to the Board for review and approval this year. The joint assessment study will be conducted in 1996.

2. Unocal proposes that rather than quarterly gauging, it would be appropriate to conduct annual or semiannual gauging. In addition, as pumps are removed for routine maintenance, the wells would be gauged as part of the maintenance procedure.
3. Unocal proposes that annual sampling for aromatic VOCs and dissolved TPH be conducted, rather than quarterly as you propose. Only those wells that do not contain LNAPL should be sampled, as is done at other locations.
4. As the Board is aware, Unocal is not the source of the halogenated VOCs present in the subsurface at the site and therefore Unocal strongly feels that monitoring for halogenated VOCs should not be part of Unocal's monitoring program. This is particularly true in light of the fact that the source of the halogenated VOCs has been identified as the HCl U.S. A. Distribution Companies, Inc. Lease Property (formerly the Occidental Chemical Corporation Lease Property). Unocal is willing to provide access to Unocal ground water monitoring wells at the site for monitoring by the Companies responsible for the halogenated VOCs.

Should you or your staff have any questions or require additional information please contact Meg George at 310-522-8022.

Sincerely,



D. D. Ching
Superintendent
Environmental Affairs

DDC:mg

Attachment

cc: With Attachment
Dennis Hagner, World Port of LA
John Nichter, Occidental Chemical Corporation
Jeff Simko, HCl U.S. A. Distribution Companies, Inc.
Jorge Leon, State Water Resources Control Board, Office of Chief counsel
Mostafa Radmand, US EPA, Region IX
Norberto Pautassi, DTSC, Region - 4, Long Beach

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD**LOS ANGELES REGION**

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A handwritten signature "MEG" is enclosed in a hand-drawn oval, positioned in the upper right area of the document.

October 16, 1995

Mr. D.D. Ching
Unocal Petroleum Products & Chemicals Division
Unocal Corporation
1660 West Anaheim Street, P.O. Box 758
Wilmington, CA 90748

**UNOCAL MARINE TERMINAL, BERTHS 148-150 PORT OF LOS ANGELES - TEMPORARY
EMERGENCY SKIMMING OF FREE-PHASE HYDROCARBON FROM THE GROUND WATER
(FILE NO. 85-8)**

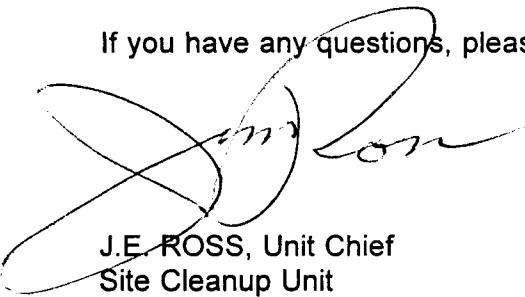
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If you have any questions, please contact Keith Elliott at (213) 266-7614.



J.E. ROSS, Unit Chief
Site Cleanup Unit

cc: See mailing list.

Mailing List

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Ms. Meg George, Unocal Los Angeles Refinery - Carson Plant
Mr. Jeff Simko, HCl U.S.A. Distribution Companies, Inc.
Mr. John R. Nichter, Occidental Chemical Corporation